In the Claims:

1. (Currently Amended): A solar heat transfer system comprising:

a one-way out pressurizing pressure relief valve;

a one-way in vacuum fluid recovery valve;

the pressure relief valve and the vacuum fluid recovery valve being plumbed in parallel from the highest single point in the solar heat transfer system to below the fluid level of an unpressurized overflow/recovery reservoir;

the solar heat transfer system configured to accommodate fluid thermal expansion and contraction in a heat transfer loop by allowing fluid to enter and leave the solar heat transfer system, wherein the heat transfer loop displaces air with fluid.

2. (Currently Amended): A fluid heat transfer loop over-temperature protection device comprising:

a solar heat transfer system configured to accommodate fluid thermal expansion and contraction in a heat transfer loop;

an overflow/recovery reservoir; and

a gas condensing assembly comprising:

a one-way out pressure relief valve fluidly connected to the overflow/recovery reservoir;

a one-way in vacuum fluid recovery valve fluidly connected to the overflow/recovery reservoir; and

a liquid-to-air radiator arranged in series with the one-way out pressure relief valve and the one-way in vacuum fluid recovery valve;

wherein the gas condensing assembly is located between the highest point on the heat transfer loop and the solar heat transfer system and is plumbed in parallel from the highest point in the system above the radiator to below the fluid level of an unpressurized overflow/recovery reservoir; and

wherein overflow fluid flows through the one-way out pressure relief valve to the overflow/recovery reservoir, and replacement fluid is drawn through the one-way in

vacuum fluid recovery valve from the overflow/recovery reservoir into the gas condensing assembly.

3. (Currently Amended): A solar collector over-temperature protection device comprising:

at least one absorber plate;

one or more air dampers;

an overflow/recovery reservoir;

a gas pressure-actuated piston; and

a heat transfer loop system fluidly connected to the pressure activated piston, comprising:

a one-way out pressure relief valve fluidly connected to the overflow/recovery reservoir; and

a one-way in vacuum fluid recovery valve fluidly connected to the overflow/recovery reservoir;

the one-way out pressure relief valve and one-way in vacuum fluid recovery valve plumbed in parallel from the highest point in heat transfer loop system to below the fluid level of an unpressurized overflow/recovery reservoir, and to open air dampers that allow outside air to flow over and cool the solar collector's absorber plate~~,~~ wherein the piston pressure input is connected between the solar collector and the device to accommodate fluid thermal expansion/contraction by allowing fluid to enter and leave the solar heat transfer system, wherein the heat transfer loop system displaces air with fluid; and

wherein overflow fluid flows through the one-way out pressure relief valve to the overflow/recovery reservoir, and replacement fluid is drawn through the one-way in vacuum fluid recovery valve from the overflow/recovery reservoir into the heat transfer loop system.

4-12. (Canceled):

13. (Currently Amended): A solar collector over-temperature protection device comprising:

a gas condensing liquid-to-air radiator;

a pressure-actuated piston operated air dampers;

and a fluid thermal expansion/contraction assembly comprising:

the pressure-actuated piston according to Claim 3;

the liquid-to-air radiator according to Claim 2; and

the solar heat transfer system according to Claim 1.

In the Claims:

1. (Currently Amended): A solar heat transfer ~~device~~ system ~~to accommodate fluid thermal expansion/contraction in a closed heat transfer loop that excludes air also, which is comprised of~~ comprising:

a one-way out pressurizing pressure relief valve;

~~[[and]]~~ a one-way in vacuum fluid recovery valve;

the pressure relief valve and the vacuum fluid recovery valve being plumbed in parallel from the highest single point in the solar heat transfer system to below the fluid level of an unpressurized overflow/recovery reservoir;

the solar heat transfer system configured to accommodate fluid thermal expansion and contraction in a heat transfer loop by allowing fluid to enter and leave the solar heat transfer system, wherein the heat transfer loop displaces air with fluid.

2. (Currently Amended): A ~~solar collector~~ fluid heat transfer loop over-temperature protection device ~~which consists of~~ comprising:

a solar heat transfer system configured to accommodate fluid thermal expansion and contraction in a heat transfer loop;

an overflow/recovery reservoir; and

a gas ~~bubble "steam"~~ condensing ~~liquid-to-air radiator~~ assembly comprising:

a one-way out pressure relief valve fluidly connected to the overflow/recovery reservoir;

a one-way in vacuum fluid recovery valve fluidly connected to the overflow/recovery reservoir; and

a liquid-to-air radiator arranged in series with the one-way out pressure relief valve and the one-way in vacuum fluid recovery valve;

wherein the gas condensing assembly is located between the highest point on the ~~solar collector closed~~ heat transfer loop and the ~~device to accommodate fluid thermal expansion/contraction in a closed~~ solar heat transfer system [[loop]] ~~that excludes air also, which consists of: a liquid-to-air radiator in series with a one-way out pressurizing pressure relief valve and a one-way in vacuum fluid recovery valve~~ and

is plumbed in parallel from the highest ~~single~~ point in the system above the radiator to below the fluid level of an unpressurized overflow/recovery reservoir; and wherein overflow fluid flows through the one-way out pressure relief valve to the overflow/recovery reservoir, and replacement fluid is drawn through the one-way in vacuum fluid recovery valve from the overflow/recovery reservoir into the gas condensing assembly.

3. (Currently Amended): A solar collector over-temperature protection device ~~that consists of~~ comprising:

at least one absorber plate;

one or more air dampers;

an overflow/recovery reservoir;

a gas ~~bubble "steam"~~ pressure-actuated piston; and

a heat transfer loop system fluidly connected to the pressure activated piston, comprising:

a one-way out pressure relief valve fluidly connected to the overflow/recovery reservoir; and

a one-way in vacuum fluid recovery valve fluidly connected to the overflow/recovery reservoir;

the one-way out pressure relief valve and one-way in vacuum fluid recovery valve plumbed in parallel from the highest point in heat transfer loop system to below the fluid level of an unpressurized overflow/recovery reservoir, and to open air dampers that allow outside air to flow over and cool the solar collector's absorber plate~~,~~ wherein the piston pressure input is connected between the solar collector and the device to accommodate fluid thermal expansion/contraction by allowing fluid to enter and leave the solar heat transfer system, wherein the heat transfer loop system displaces air with fluid; and

wherein overflow fluid flows through the one-way out pressure relief valve to the overflow/recovery reservoir, and replacement fluid is drawn through the one-way in vacuum fluid recovery valve from the overflow/recovery reservoir into the heat

transfer loop system. ~~in a fluid filled, closed loop, system, which consists of: a pressure activated piston connected to the closed loop, a one way out pressurizing pressure relief valve and a one way in vacuum fluid recovery valve plumbed in parallel from the single highest point in the solar system to below the fluid level of an unpressurized overflow/recovery reservoir.~~

4-12. (Canceled): ~~A flexible umbilical assembly that carries and insulates the heat transfor fluid tubing while protecting it from the elements with a clamp on "clam shell" split pipe external covering and includes all electrical connections between the solar collector and the hot water tank.~~

~~5. (Canceled): The system as in claim 1 comprised of a 220/115 VAC controller and pump and boiling activated over temperature protection.~~

~~6. (Canceled): The system as in claim 1 comprised of a 220/115 VAC controller and pump, with pressure activated over temperature protection.~~

~~7. (Canceled): The system as in claim 1 or claim 2 comprised of a a photovoltaic panel and low voltage (12VDC) pump, with boiling activated over temperature protection.~~

~~8. (Canceled): The system as in claim 1 or claim 3 comprised of a photovoltaic panel and low voltage (12VDC) pump, with pressure activated over temperature protection.~~

~~9. (Canceled): The system as in claim 2 comprised of a 220/115 VAC controller and pump and boiling activated over temperature protection.~~

~~10. (Canceled): The system as in claim 3 comprised of a 220/115 VAC controller and pump, with pressure activated over temperature protection.~~

~~11. (Canceled): The system as in claim 2 comprised of a a photovoltaic panel and low voltage (12VDC) pump, with boiling activated over temperature protection.~~

~~12. (Canceled): The system as in claim 3 comprised of a a photovoltaic panel and low voltage (12VDC) pump, with pressure activated over temperature protection.~~

13. (Currently Amended): A solar collector over-temperature protection device ~~which consists of~~ comprising:

a gas ~~bubble "steam"~~ condensing liquid-to-air radiator[[,]];

a pressure-actuated piston operated air dampers[[,]];

and a fluid thermal expansion/contraction assembly~~, which consists of~~ comprising:

~~a piston mechanical actuator for collector air dampers~~ the pressure-actuated piston according to Claim 3[[,]];

[[a]] the liquid-to-air radiator according to Claim 2; and

~~a fluid thermal expansion/contraction assembly~~ the solar heat transfer system according to Claim 1.